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Trains

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June, 1946

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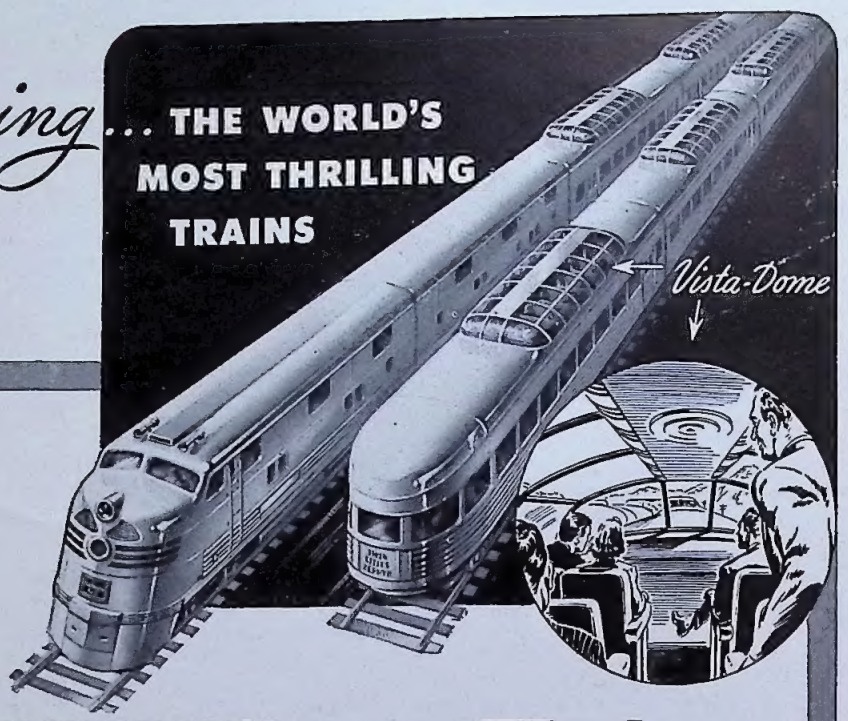

BURLINGTON'S NEW TWIN *Zephyrs*

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• When the Burlington introduced America's first VISTA-DOME car in July, 1945, this promise was made—"if the public likes the VISTA-DOME idea—the Burlington plans a fleet of these cars for the future."

It didn't take long to find out the public *did* like the idea of riding in a "penthouse on wheels." Not since the Burlington introduced America's first diesel-powered, streamlined train, back in 1934, have we seen such immediate, widespread enthusiasm.

And so—America will enjoy another "first" in modern transportation—two new diesel-powered, stainless steel Zephyrs, each of which will have five VISTA-DOME cars. These new trains are being built now. In design, construction and appointments, they will symbolize "the last word" in modernity. In terms of spaciousness, conveniences and luxurious comfort, they will surpass even the present Twin Zephyrs which they will replace in regular service between Chicago and St. Paul-Minneapolis.

So look forward to an utterly new travel thrill—to the day when you can enjoy a penthouse view as you glide along Burlington's beautiful upper Mississippi River route "where Nature smiles 300 miles."

Way of the Zephyrs

BURLINGTON LINES

Everywhere West

CHICAGO, BURLINGTON & QUINCY RAILROAD • COLORADO and SOUTHERN RAILWAY
FORT WORTH and DENVER CITY RAILWAY • THE WICHITA VALLEY RAILWAY • BURLINGTON-ROCK ISLAND RAILROAD
AN ESSENTIAL LINK IN TRANSCONTINENTAL TRANSPORTATION

Burlington Route

Trains

June 1946 **Volume 6, Number 8**

A. C. Kalmbach - Editor and Publisher

Linn H. Westcott - Editorial Director

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The size and distribution of this issue has been limited due to the coal strike.

The Coal Strike and the Railroads

The coal strike came, went unnoticed for nearly a month, and then with seeming suddenness, caught the country in a most embarrassing spot when it forced drastic cuts in railroad service. Almost as suddenly came the truce, and some restrictions were called off, perhaps to return before you read this.

To some railroads, like the New Haven, the coal strike meant little. Much New Haven passenger train mileage is hauled by electrics and Diesel-electrics. Diesel switchers were doubled on commuter runs and two-unit road Diesels were cut into two locomotives to work trains formerly hauled by steam. As a result New Haven canceled only the Narragansett race trains.

But New York Central was in a real fix with many of its main line Chicago-New York trains like the *Water Level Limited*, the *Iroquois* and *Mohawk* annulled. Most roads met the original 25 per cent passenger mileage cut by taking off the less used local mainline trains and branch line connections and then adding stops to important through schedules so as to continue service to the smaller stations.

Many of the country's famous solid mail and express trains came off as the freight embargo was extended to express. Mail continued to be handled on passenger trains and in no cases was mail service interrupted.

The larger roads were able to rearrange make-up of trains so that many through Pullman runs were continued even though they did not go on the usual schedule. New York Central, for instance, combined the *Advance Commodore* with the *New England States*. The Pennsylvania eliminated double-heading and changed train make-ups and car assignments so that all trains were loaded to the capacity of the single locomotive.

Some roads with only a few passenger trains were hard put to divide a small mileage so as to eliminate 25 per cent. Soo Line and Pere Marquette faced this situation by making some trains tri-weekly.

The mine truce saved the country from a 50 per cent cut in passenger service, but even the 25 per cent restriction gave patrons a good idea of which trains were considered least profitable or least necessary.

It was the freight embargo, even more than the passenger restrictions, which brought the coal strike home to most Americans. For three days coal burning locomotives moved no freight except for certain essentials. Factories closed down. The commercial life of the nation was gradually drawing to a stop. If ever there was an instance of what the railroads mean in American life, this was it.

It was also, of course, an instance of what coal and John L. Lewis mean in American life, and it likewise high lighted the growing importance of Diesel and electric motive power. Whatever concessions Lewis wins from the mine owners, the strike will further speed the Dieselization of American railroads. Already the price of locomotive coal has increased 50.0 per cent in the last five years, while Diesel oil has gone up only 10.9 per cent. And electrification, especially in the west where large sources of water power are available, will be still further accelerated. Electric power costs can be frozen as much as 25 years in advance by long term contracts, while no one can guarantee what either coal or oil will cost.

Railfan Trips

From Clarksburg, W. Va., July 14, over Fairmont-Clarksburg Division of City Lines of West Virginia. An interurban excursion, all day, over 150 miles of scenic line for $2. Good B&O connection at Clarksburg. Further information from Stephen Davidson, 902 Swann St., Parkersburg, W. Va. . . . From Buffalo (8:10 a. m.) and Dunkirk over Dunkirk, Allegheny Valley & Pittsburgh freight only line of NYC, July 21. Dining service. Further information from John Prophet III, 55 Meadow Rd., Buffalo 16, N. Y.

Monon Reorganized

The Monon is again a solvent railroad after 13 years in bankruptcy. Formal title of the road is Chicago, Indianapolis & Louisville, and its 545 miles include a main line between Chicago and Louisville, with a branch main line from Monon to Indianapolis, and 125 miles of branches operated for freight service only.

The road has always had a special place in the hearts of Hoosiers and a dinner in a Monon diner amidst the Indiana countryside is a travel classic. New president of the road is John Barriger III, formerly associate director of

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the ODT Railway Division, reorganization director of the C&EI, federal manager of the TP&W, and chief of the RFC Railroad Division. Plans are afoot to modernize the Monon, including complete Dieselization.

Faster Freight Trains Bid for Merchandise

Freight service by rail is in for just as much of a speed-up and glamourizing as is the passenger service. While speed is immaterial for the great bulk of heavy freight, the small percentage of high rate merchandise freight is to many roads the slim margin between profit and loss. Special schedules of absolute dependability and reasonable speed have proved before the war the value of such trains in attracting the high rate traffic and now that wartime restrictions are off the idea will spread.

The Rock Island has started a new high-speed *Rocket Freight* cutting 24 hours off schedule between the Twin Cities and Texas Gulf ports. Heavier rail, CTC, strengthened bridges and 5400 horsepower Diesels all contribute to the schedule reduction. *Rocket Freights* are also operating between Chicago and Houston-Galveston.

Transcontinental freight schedules between Chicago and the West Coast have been cut 24 hours by all lines involved. This reinstates the seventh morning prewar delivery schedule.

This month New York Central starts the Pacemaker Freight Service, handling less than carload freight on passenger train schedules. Trains of 75 cars or less will operate under a 65 mile-an-hour speed limit and will cover the 429-mile New York-Buffalo run in 10 hours 50 minutes. A pool of 425 cars, specially painted vermilion red and dark gray, will be used and another 575 cars are to be added. All were built in 1945 by Despatch Shops, Inc., East Rochester. Motive power will be Class L-4 Mohawk type steam locomotives.

B&O Station Change

After several months of difficulty, the B&O has finally made its move to Michigan Central Station in Detroit. The change not only affords B&O passengers larger station facilities in Detroit, but allows trains to move over NYC tracks between Toledo and Detroit, saving seven miles over the old route. For nearly 30 years B&O service into Detroit has been over Pere Marquette rails into the Fort Street Union Station, but when the contract ran out some months ago PM refused to renew because Fort Street is already crowded to capacity and plans for improvement of the station and service into it will tax the facilities even more.

C&O Consolidation Approved

The merger of Pere Marquette and Chesapeake & Ohio has been approved by stockholders and directors of both roads and now needs only I. C. C. approval. This is expected. Robert J. Bowman, president of PM, will head the combined company.

The system created by the merger will total approximately 5000 miles of mainline mileage. It will embrace lines from Newport News and Washington, via Columbus, to Toledo, and, via Cincinnati, to Chicago, and a line, north of Lake Erie, from Buffalo into Michigan. Throughout the lower Michigan Peninsula the PM forms a veritable filigree of rails, linked by car ferry service with the west shore of Lake Michigan, where traffic is interchanged with carriers serving the northwest.

Locomotive Notes

The Fitchburg Division of the Boston & Maine, which includes the Hoosac Tunnel, will soon be completely Dieselized and, since the Diesels can operate right through the tunnel, the electrification at and west of the tunnel will be junked. A new fan installation has been built atop the tunnel's ventilating shaft to better clear the tunnel of locomotive fumes. . . . New York Central has rebuilt some electric locomotives into trailer motor units to use with Diesel electric switchers in slow, high tractive effort, hump service. These trailer units look like flat cars, mounted on locomotive trucks, and are fitted with three large boxes for blowers, sand and controls. They are multipled with either one or two locomotives depending upon power needed.

Truman at the Throttle

B&O cashed in on some good publicity recently when President Truman took the throttle of Diesel No. 78, which powered his 10-car special to Fulton, Mo., and return. It was between Cincinnati and Columbus, both directions, that the President "ran" the engine and gave photographers a field day. He seemed to get a big kick out of all this, and so did Dan Moorman, B&O general passenger agent in Washington who arranges most of the presidential rail transportation.

Moorman comments that Truman's two railroad trips since becoming president (the other was to the Army-Navy football game) are in contrast to the many taken by Roosevelt. Railroad men have also noticed a difference. Roosevelt asked for slow, easy runs to enjoy the country, but Truman wants the fastest schedule and then some.

Odds and Ends

Missouri Pacific has ordered three astra dome cars for the *Colorado Eagle*. . . . Pullman-Standard will soon be turning out new passenger cars at the rate of seven every working day. Shortages of parts from outside suppliers is still the bottleneck. . . . If present orders are fulfilled, nearly 40,000 additional freight cars will be put in service later this year. Largest number of these, 35 per cent, will be hopper cars of which over 3000 will have covers. . . . New York Central will install new type hot-box alarms on 720 new passenger cars and some Niagara type locomotives. Alarm gives off cloud of smoke and penetrating odor if axle journal reaches a dangerous temperature. Cartridges held in cavities in the bearing have fusible metal which melts letting chemicals diffuse into the air for 10 minutes.

Railroad Strike

The threatened railroad strike may or may not have happened by the time you read this, but this and all the other strikes make it more and more clear that we need something better than shotgun methods of settling labor disputes. Nobody wins a strike, least of all the general public — and that means all of us. Both labor and management think compulsory arbitration an invasion of their rights, but isn't it about time we insisted upon the outlawing of strikes against the public interest and the creation of some means of impartially judging the facts and settling labor disputes by peaceful means?

A. C. Kalmbach.

Trains Photo Contest

The editors of Trains are offering **extra prize money** in addition to regular payments for the use of picture stories. Each entry should include five or more pictures that tell a story about some phase, any phase, of railroading. At least some of the pictures in a series should be work done this year and all entries should conform to the rules printed on this page.

This is going to be one of the best of all railroad photograph seasons now that film is available and war restrictions are removed. If you're wondering what stories to shoot, look over the photographs in a few back issues of Trains and see if you can't do better on some similar subjects. You don't have to write any polished articles to win in this contest. We want information about your pictures, lots of it, but the technicalities of your English and punctuation won't matter — whether you are a Shakespeare or Lil' Abner.

Get in a cab if you can, ride an observation car, walk the track, stalk a limited or perhaps record the daily run of a branch line mixed. Glance over Barham's and Peterson's story about the PE in the May issue or the tunnel pictures which, although run with an article, could have been run as a photo series. The subject material is endless and you're bound to have fun making up an entry.

Rules for Eligible Entries

1. Entries will be judged on the basis of:
   a. Subject matter and interest.
   b. Completeness of the series.
   c. Information supplied.
   d. Photographic quality for reproduction purposes.
2. Prizes in addition to regular rates at time of use will be:

   First Prize, $50. **Second Prize, $20.**

   Third Prize, $15.

   Fourth Prize, $12. **Fifth Prize, $10.**

   There will be no tie prizes awarded.
3. Make sure that at least some of the pictures in your series were taken since January 1, 1946.
4. Alternate photos of the same subject, or photos that illustrate extra information may be included and will add to the value of a series even though some may not be of as good quality.
5. All entries become our property but payment will be made according to our regular rates when published in addition to and regardless of any prize money earned. Prize money will be paid to winners when contest is announced. Publication payments will be made later as the pictures are used.
6. No entries will be returned to the entrant. The entrant may not submit any of the contest entry photos for reproduction by another user without the consent of Kalmbach Publishing Co.
7. Negatives may be kept by the entrant but we may ask to borrow them for some special reason. Entrants retain the right to sell or give extra prints to other railfans from their negatives as long as such prints are marked "not for reproduction."
8. All prints submitted must be glossy finish, not smaller than two inches square and not larger than 8½" x 14".
9. If mounted, place prints on one side of the mount only, so that an entire entry can be spread out on a table. Loose-leaf albums are acceptable.
10. Include one or more pages of information about the story the pictures tell. This can be a brief but complete outline of whatever is illustrated, or it can even be as long as the Barham article in the May '46 Trains. This general information should be in addition to the information accompanying each photo (rule 11).
11. Include specific information with each of the pictures to make the part of the story it tells clear. Add the approximate date when the pictures were taken, locations, etc.
12. If an entry includes the work of another photographer beside yourself, be sure you have a right to submit the other man's work. At least part of the entry should be pictures taken by you. Several photographers in the same or in different localities may collaborate on a single entry if desired. Photographs taken by Kalmbach Publishing Co. employees are not eligible for prizes.
13. Mark PHOTO CONTEST and your name and address on each photo and data sheet of your entry. Add the photographer's name and address on any pictures you did not take yourself.
14. Send your entry so that it will be postmarked before midnight October 31, 1946, to Photo Contest, care of Trains magazine, 1027 N. 7th St., Milwaukee 3, Wis.

*

W.&L.E.

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Northwestern Pacific.

Redwood Vista on NWP

Northwestern Pacific runs in the shade of giant redwoods and before the war its day train in combination with a bus to Grants Pass offered a fine scenic through route.

Redwood Empire Route

Through the scenic coastal country north of San Francisco, Northwestern Pacific has scenery with its service

BY RICHARD HOUGHTON

Northwestern Pacific is 330.52 miles of standard gauge railroad in five scenic northern counties of California where tall trees of the Redwood Empire are thousands of years old.

The main track climbs northwestward from San Francisco Bay over a summit called Ridge, near Willits, the approximate halfway point, and descends from there to Humboldt Bay on the coast, where the city of Eureka reigns as lumber and commercial fishing capital of northern California. The railroad has only one physical connection with other lines located near the bay. On a small map the main route seems simple and straight. Actually it is tortured and twisted by operating and maintenance problems in the three canyons it follows — canyons where trout and salmon lie in still pools in summer, and where torrents rage and mountainsides slip in winter. NWP spends about $2 million a year on roadway maintenance.

In days well remembered by railfans NWP also operated an electric interurban network serving a large part of Marin county just north of San Francisco Bay, with ferry connections to San Francisco. Thousands of San Francisco-bound merrymakers crowded these lines to the NWP ferries at Sausalito after week-ending at Mill Valley or other beauty spots. The all-time record was 36,000 for the last night of the three-day July 4 holiday in 1924.

The passenger ferries and the speedy electric cars passed into history in the spring of 1941, by which time automobiles and busses had robbed the railroad of most of its passengers, and the great Golden Gate bridge had outmoded the picturesque ferry fleet. On its last scheduled run, February 28 of that year, the white ferryboat "Eureka," its walking beam rocking lazily in its cradle, moved under the awesome span of the lighted bridge at midnight and paused in tribute to a faster and more modern kind of transportation. Commuters wept, but there had not been enough of them for years to pay the heavy expenses of operating the ferries and the connecting trains.

Steam trains are the backbone of NWP today — a variety of freights, and one passenger train each way each night on the main line. Passenger connection to San Francisco is by Greyhound bus from the new NWP southern passenger terminal at San Rafael.

Let's take an imaginary trip north on NWP on a summer night, and back into its history.

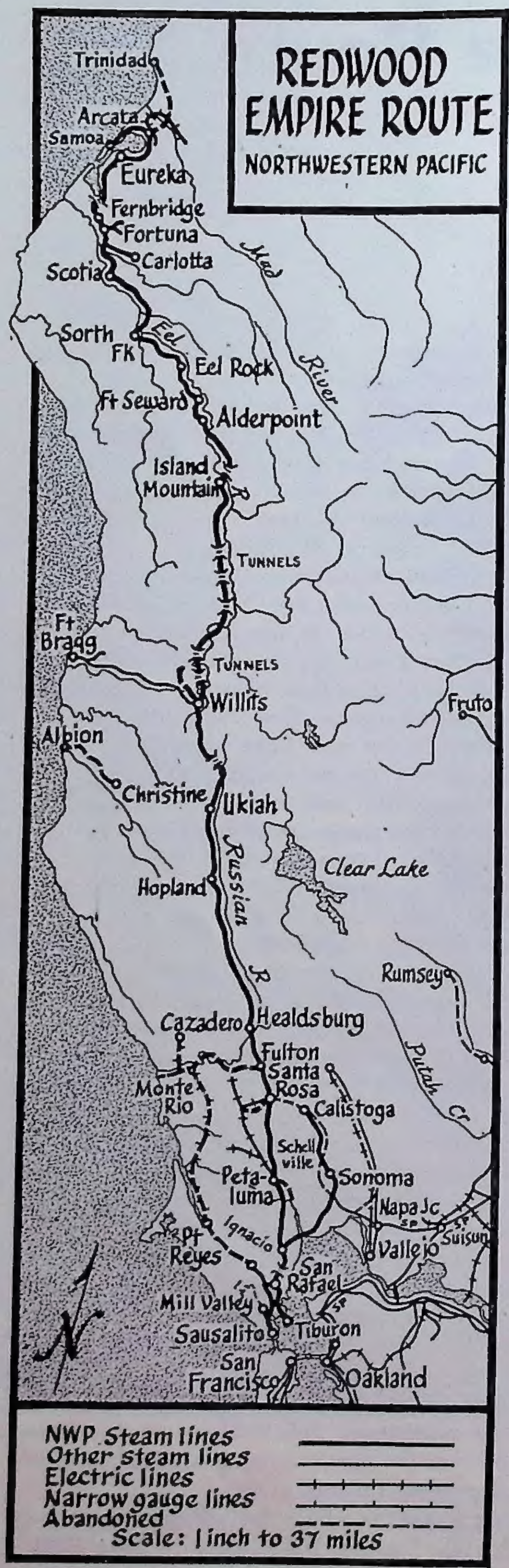
Boarding a bus in the financial district of lower San Francisco, we ride about sundown across the Golden Gate bridge — a thrill to be remembered always. This suspension span is a roadway in the sky, hung on a web of steel between red towers reaching 746 feet above the water. The main span is 4200 feet long.

Beyond the north end of the bridge the highway plunges into a tunnel in the precipitous hills, and a moment later bursts out above an almost Alpine scene (minus the snow). Passengers on the right looking steeply downward see Sausalito on the shelf of shore between light brown hills and water. White sails of yachts and fishing boats dot the anchorages.

Sausalito was for years the southern passenger railhead of the NWP. But if you look northeast from the highway above the town about two miles you can see a peninsula of hills jutting into San Francisco Bay and a narrow line of railroad track just above the water level making its way to the end. Partially obscured by an island, from our viewpoint, is Tiburon on the end of the peninsula. Here much of NWP freight is shipped by car floats to piers 25, 43 and 45 in San Francisco and to Oakland and Richmond across the bay.

The Tiburon and Sausalito lines join some miles northward. This dual terminal arrangement was the result of the amalgamation of two independent railroad systems.

At Sausalito where the old passenger ferry slip was located, NWP early in 1944 built a



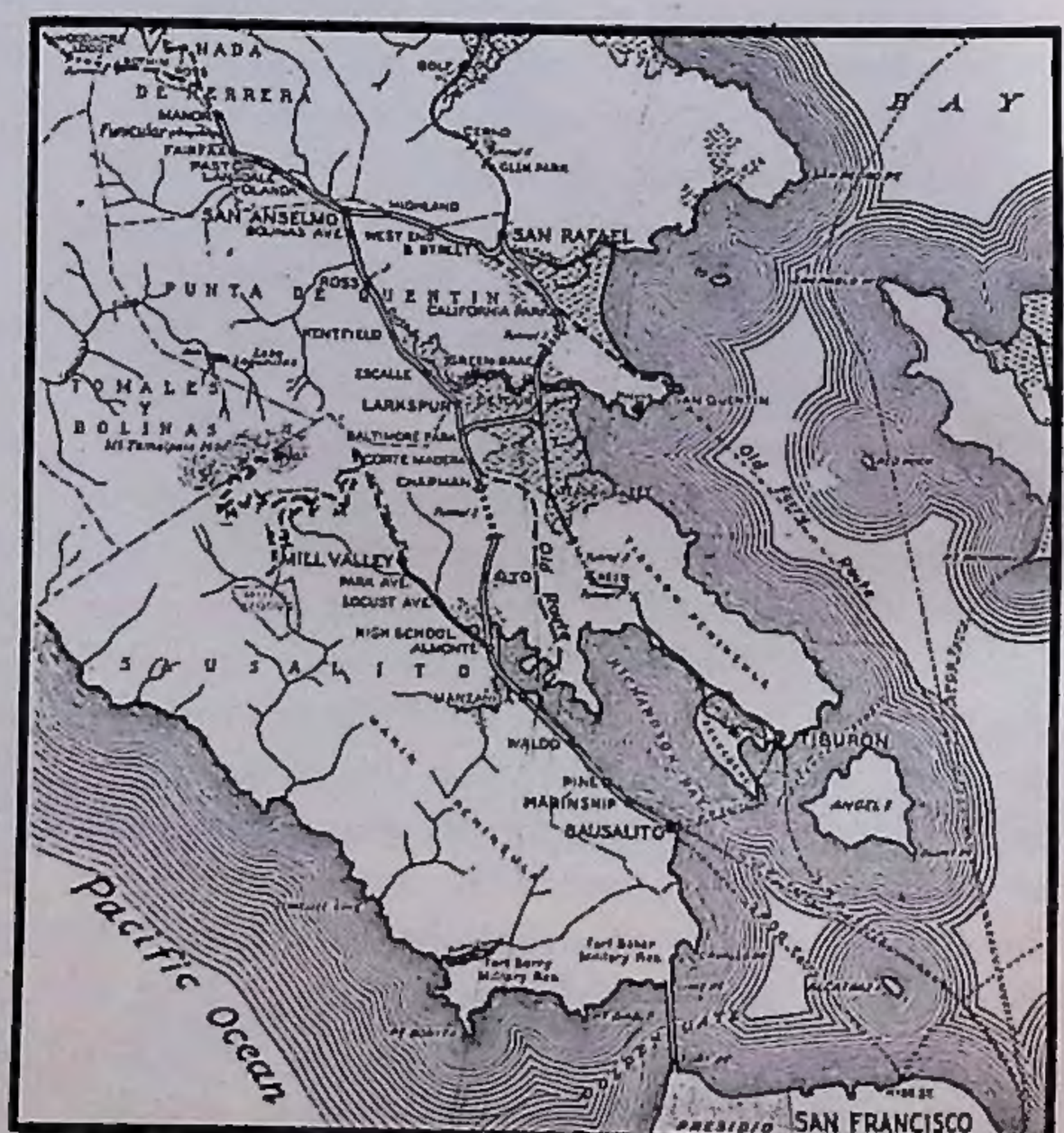
Al Timler.

car float slip to provide an additional connection for the war emergency — in case the Schellville all-rail route or car float service to and from Tiburon might temporarily be out of service. This new car float slip provides connection via freight car barge with rail lines at Oakland and San Francisco.

In another minute the view of the bay is replaced by the spreading shipyards at Marinship. In the spring of 1942 the railroad sold the site of Marinship to the Federal government and sped the shipbuilding program by immediately dismantling a large steel turntable, taking down huge oil and water tanks, and moving its tracks — all while bringing in thousands of tons of material, and without interrupting service!

With very few exceptions, all the material which went into the victory ships and tankers built by Marinship was brought in by NWP. Loaded freight cars diverted from the main line of the Southern Pacific at 10 p. m. were on hand in the yard of Marinship when the day shift came to work the next morning.

As the bus carries us on toward San Rafael the track is seen at close hand. Being railfans we know that John Martin introduced the electric operation on the line in 1902, when this railroad was named the North Pacific Coast and was narrow gauge. He renamed it the North Shore Railroad. The suburban network connecting Sausalito with Mill Valley, San Anselmo and San Rafael, Fairfax and Manor was made standard gauge and electrified with a



Northwestern Pacific.

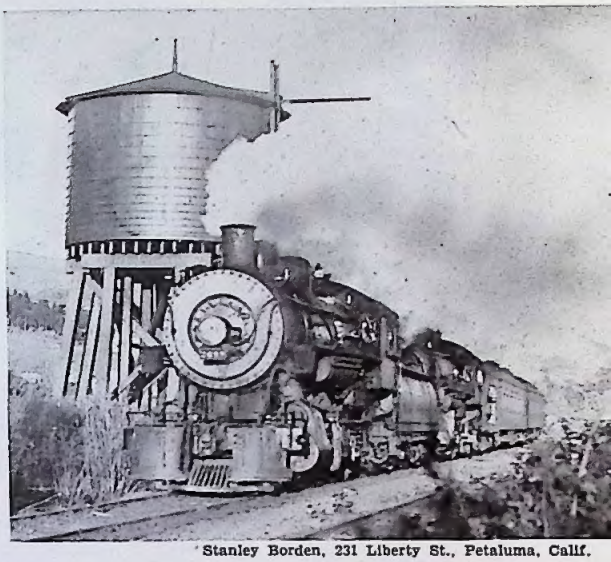
third rail system in 1903 and 1904. There really were four rails so the narrow gauge steam trains which continued for more than 70 miles to Cazadero could use the same roadbed.

A powerhouse at Alto just south of Corte Madera supplied current at 600 volts D. C. An aluminum rod was laid the entire length of the electrified system to supplement and feed the power rail. Because the trains were propelled by direct current, the block system was alternating current, first of its kind.

The most modern interlocking plants were built at junctions, and new ferries and new passenger rolling stock constructed. The railroad also planned electric freight service, and built a steeple-cab electric locomotive named *Electra,* but this consumed so much juice that other electric units had to shut down when it operated. Rather than increase the output of the power plant, the job of pulling freight was given to a steam locomotive.

Passenger business of the electric line was for many years handled with green wooden motor coaches, pulling trailers of steam-coach type, most of them built during 1902 and 1903 by various car builders and supplemented by units constructed in the North Shore shops. These Pullman-green cars gave remarkably smooth service. Large orange steel units brought new luxury to the commuters in 1928-1929.

Early in the electrification program most of the interurban system was double-tracked. A notable exception was the old tunnel near



Stanley Borden, 231 Liberty St., Petaluma, Calif.

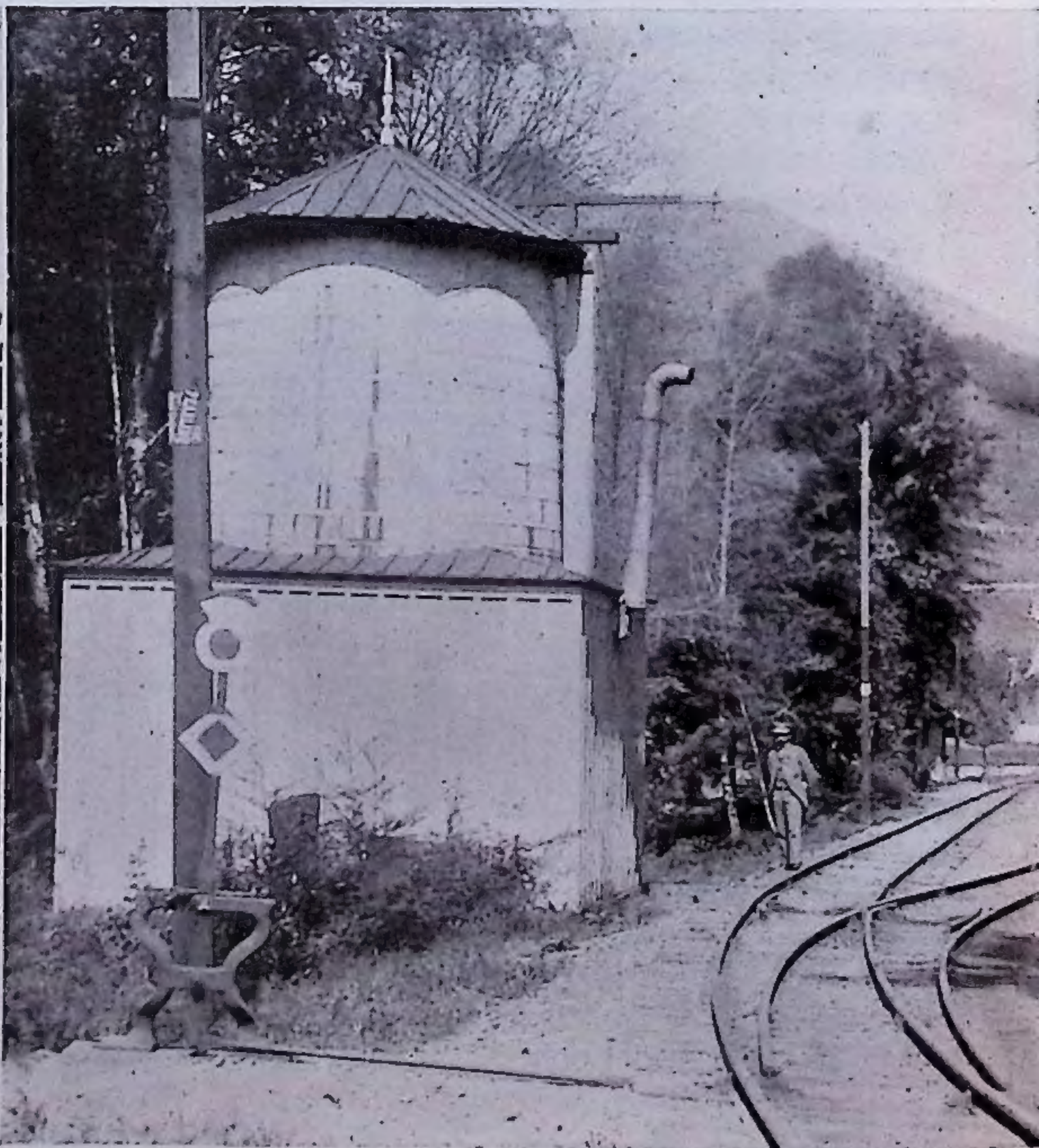
The maps show the line of the NWP and an enlarged detail of the terminal territory. Electrified track extended from Sausalito to San Rafael by two routes, and to Mill Valley and Manor. Originally the Manor Line continued as narrow gauge to Cazadero. Later it was made standard gauge as far as Point Reyes Station and a new tunnel was bored just beyond Manor. The main line to Eureka leaves the small map just above San Rafael. Near here at San Quentin is the site of the pre-Sausalito terminal of the narrow gauge. The cutoff between the Tiburon and Sausalito lines at Detour was built about 1912 under Southern Pacific when operations on the two original main lines were consolidated. Above, partly made up passenger train leaves Tiburon. It will get more cars at San Rafael. Below, freight near Novato.

Arthur L. Lloyd, 1806 Silverado, Napa, Calif.

Jack Farley collection, 1905 Fifth Ave., San Rafael, Calif.

Redwoods shade the standard gauge main line today in much the same way as they did the Cazadero narrow gauge in the '90's. This may be one of the picnic trains that used to make the 80-mile trip. Below, left, all that remains of this branch today is an interrupted series of cuts and fills. Here the grade passes the secluded San Geronimo Station buildings.

Jim Morley, 2635 Etna St., Berkeley, Calif.



Corte Madera. When the electrics came, reconstruction of this one-track narrow gauge tunnel for two standard gauge tracks would have been too expensive, so the line was single-tracked through the tunnel, with automatic block signal protection at either end, and lights throughout.

In 1920 the part of the narrow gauge service between Sausalito and Point Reyes was made standard gauge. Ten years later the last stretch of narrow gauge between Point Reyes and Cazadero was taken out, and the railroad thereafter was entirely standard gauge.

But the old narrow gauge trains, with their highly polished locomotives, won an enduring place in the hearts of railroad historians. Before electrification every commuter in Mill Valley knew old No. 2, a Forney type 0-4-0, double-ended to run in either direction. Her bell was cast with a large percentage of silver coins and had a tone of its own. Her whistle sounded all fire alarms, including forest fires, and she even pulled stumps along the right of way.

To warn residents of a resort a short distance away from Mill Valley Station in the redwoods that train time was near, No. 2 would blow her whistle five minutes before starting out in the morning. In wet weather the engineer stopped his train in front of homes, not bothering whether that was a station stop or not. He would just blow his whistle to let the passenger know he was out in front waiting for him. As most of the commuters were men, in wet weather they would ride on the engine down to the junction, where they would connect with the main line. No. 2 would return to Mill Valley.

The towns of Mill Valley, Larkspur, Kentfield and San Anselmo did not exist when the narrow gauge steam line was started in the early 1870's. The main aim at first was to get from the ferry landing at Sausalito (then spelled Saucelito) by the easiest route to San Anselmo Junction;

At the foot of Mt. Tamalpais is Mill Valley where a narrow gauge branch of the North Pacific Coast terminated. In 1902 the gauge was widened and service electrified. A scenic railroad was built from here up to the top of the mountain with a branch to Muir Woods. Below, engine 14 with Engineer W. G. King and the train crew, is standing at Sausalito.

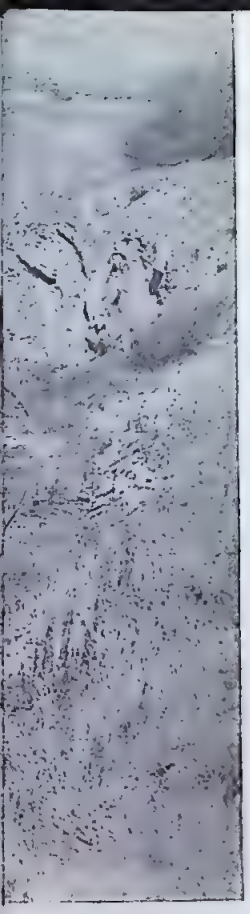
Behrman collection

W. G. King, 45 Palm Ave., San Rafael, Calif.

Arthur R. Alter, 259 E. Sixth St., Los Angeles, Calif.

NWP's suburban electrification was as up to date as any for many years. Cars similar to those operated on the SP Oakland-Berkeley electrification were used but third rail shoes replaced the more familiar pantagraphs. Above, emerging from the tunnel at Alto on the only section of single-track main line. This tunnel was built for the narrow gauge North Pacific Coast to eliminate a bad grade. Car, below, is about to stop at one of the wayside stations in San Anselmo.

W. O. Whittaker.



Upper, B. H. Ward, San Francisco; lower, Addison H. Laflin collection, Washington, D. C.

Electrification Scenes

Older equipment was built along interurban lines or converted from old steam road cars. These units were reputed to travel 70 miles per hour. Top, arriving at Sausalito. Center, same place as scene on opposite page but years earlier when fourth rail was used for narrow gauge trains. Below, train from San Rafael entering the San Anselmo Station. Manor line is to the left.

B. H. Ward.

so the narrow gauge rails skirted the bay from Sausalito, crossed Richardson's Bay on a pile trestle, climbed Alto Pass, circled a hill to come into Corte Madera from the east, and went up Ross Valley to San Anselmo Junction. There the line branched, one way to Cazadero, the other to San Rafael and San Quentin.

Richardson's Bay trestle was abandoned in 1887 and long earth fills were made to reroute the rails to Mill Valley Junction (now Almonte). The line went from Mill Valley Junction to Alto, then through a new tunnel (already mentioned in connection with the later electric line) to Corte Madera.

In 1889 a branch to Mill Valley was leased from a subsidiary by the North Pacific Coast, and after 1896 made connections with the famous Mount Tamalpais & Muir Woods Scenic Railway which climbed from Mill Valley with geared locomotives to the top of Mount Tamalpais. The scenic line was advertised as the world's most crooked railroad. It was abandoned in 1930 after a disastrous fire and the completion of an automobile toll road up the mountain.

In pre-automobile days NWP derived more than half its revenue from passenger traffic — from commuters traveling between San Francisco and Marin county, and from vacationers seeking retreat and inspiration in the heart of the Redwood Empire. Even before completion of the Golden Gate bridge in May, 1937, automobiles turned the railroad's books upside down, and in 1944 the passenger traffic revenue of NWP was only three per cent of its total.

By the time we can recall all this history our bus is pulling into San Rafael, just a few minutes before departure time of No. 4, the *Eureka Express*. The bus deposits us at a very attractive railroad station, long and low, with stucco walls and tile roof in spanish style, housing also the offices of General Manager C. A. Veale and his staff.

Before the arrival of the bus, the train minus its headend cars had been made up in the yards at Tiburon. There the railroad has the main shops for its 39 locomotives, of which 16 have been rented from Southern Pacific.

In the yards near the San Rafael Station so many overnight l. c. l., mail, baggage and express cars are coupled into our train that when the *Express* is finally ready to leave it is made up mostly of these cars — usually with only two or three coaches and Pullmans attached to the rear end.

No. 4 is double-headed because NWP's engines are small and have to fight grades of three per cent maximum on their way up toward Ridge. The locomotives are mostly light Ten-Wheelers and Consolidations, and an engine rated at 1000 tons between Tiburon and San Rafael, for example, may drop to as low as 300 tons rating from Redwood Valley to Ridge.

The main line, over which we are soon to travel, was originally a different company group

Northwestern Pacific.

from the narrow gauge and electric lines. It was a collection of small projects that eventually extended from Tiburon to Willits.

It is still light enough to view some shadowy scenery as No. 4 starts northward with us, operating under automatic block signals for the first five miles out of San Rafael, and from then on by timetable and train order.

After a brief climb and a dive through a deep cut we are out on the flat again, wheeling along at better than 40 miles an hour. We pass the junction at Ignacio — the point of entry of cars from SP's Overland Route — and soon the name of a station, "Haystack," flashes us back into history again. It was from Haystack Landing on Petaluma Creek, to Petaluma, a distance of 2½ miles, that Charles Minturn in 1862 built the very first of the 41 railroads that have gone into the making of NWP. Today's trains are still using Minturn's original route.

Minturn's railroad can be grouped with a number of others, all stemming from Sonoma county. These were in time developed and consolidated by such men as Peter and Colonel J. M. Donahue, A. W. Foster and others. Under the names of San Francisco & North Pacific, and California North Western, their tracks extended halfway to Eureka.

One of the interesting old lines was the Sonoma Valley Prismoidal Railroad (1875-1876) whose single rail, elevated on "A" frames, proved impractical at wagon road crossings. After a few months it was converted to three-foot gauge and became part of the Sonoma Valley Railroad, broad gauged in 1890.

The Donahue Lines, as they came to be called, were bitter competitors of the Marin county narrow gauge. In 1879 Donahue pushed his lines southward deeply into Marin county, reaching San Rafael, and in 1884 established his main ferry terminal at Tiburon, competing fiercely with Sausalito. He also threw out a 16-mile branch from his main north-south line to Guerneville, competing with the narrow gauge for the rich timber business of the Russian River area.

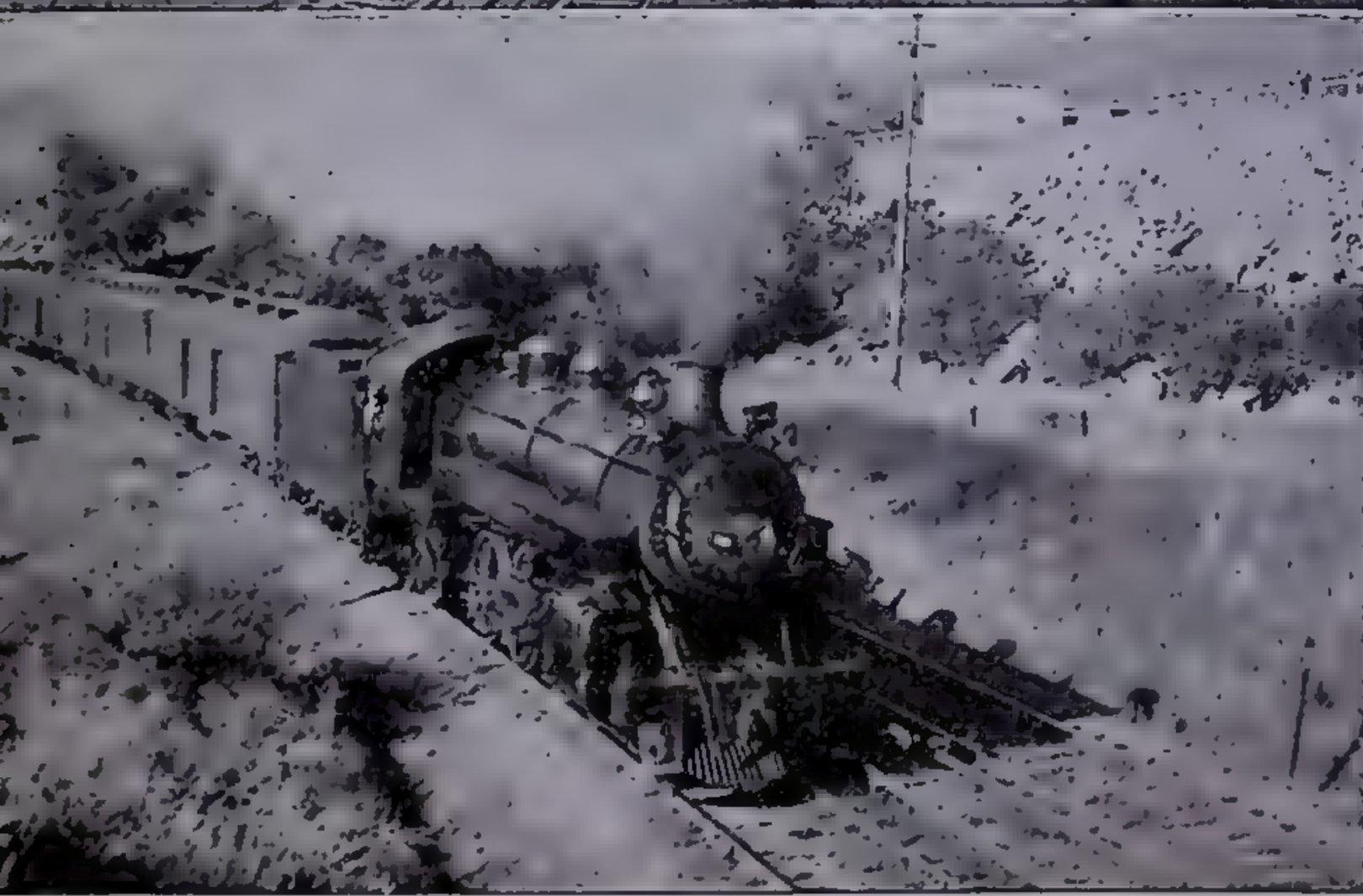
Our train is due in Petaluma at 9:10, by which time night has really settled down and little can be seen of this community which boasts the title of "the world's egg basket." Its economy is based on the poultry business in a big way.

Left, old photo showing Sausalito Ferry landing of North Pacific Coast Railroad in 1893. Note single-ended steamers San Rafael and Tamalpais. The slim gauge San Rafael local is waiting behind a well-groomed American type locomotive. Below, the Eureka, on its last day, passes the bridge that put it out of business. The ferry was built in 1890 for the SF&NP as a combination car and passenger boat. It was rebuilt in 1922 to handle a capacity of 2300 commuters.

Northwestern Pacific.

Stanley Borden, 231 Liberty St., Petaluma, Calif.

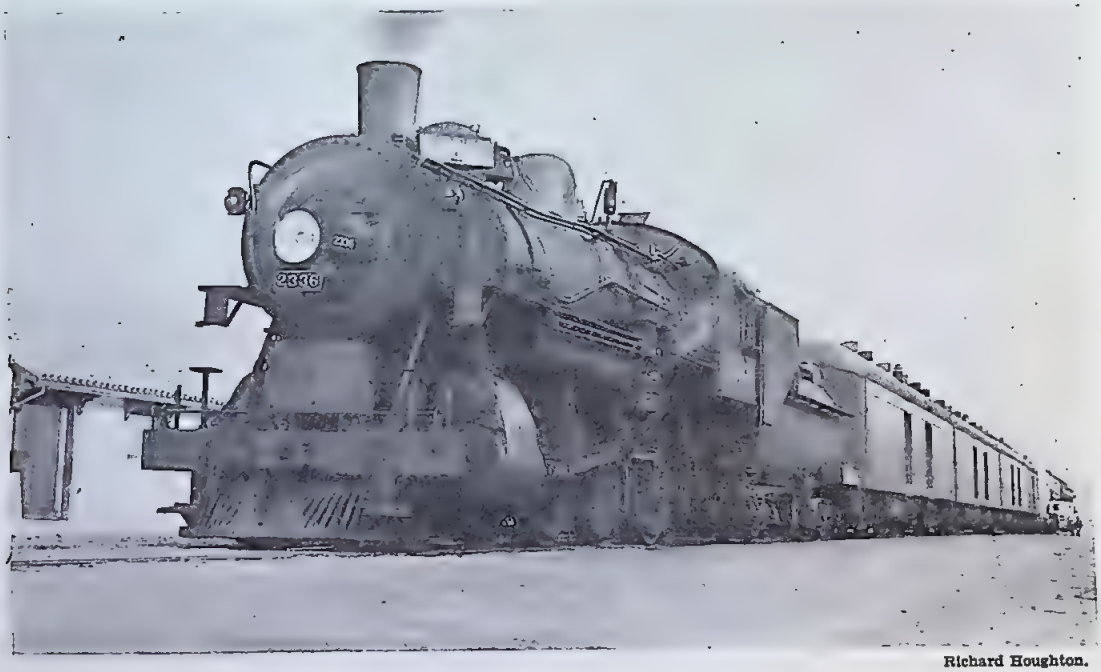
These views are typical of NWP passenger trains. Above, prewar trains Nos. 1 and 2 meet at Willits and crews check their watches. Below, two scenes in electrified territory before the third rail was removed. Signal tower is at junction between Detour cutoff and the old North Shore route at Baltimore Park. Other view is near Greenbrae. Opposite, train No. 3 westward (actually southeast bound) leaves Petaluma for San Rafael at 7:12 a. m. after an all night run.



W. O. Whittaker.

"Chicken feed" is no expression of scorn in this home of the largest feed elevator on the Pacific Coast, where many mills and warehouses prepare and store the raw material for eggs, and where there is even a pharmacy devoted wholly to compounding and marketing poultry remedies. In 1944, NWP brought into this territory approximately 900 carloads of raw material monthly for the manufacture of chicken feed. The outbound movement calls for extreme care in handling, as it includes day-old chicks in special containers and eggs by the millions.

Petaluma is the point where barge and steamer service of the Petaluma & Santa Rosa Railroad connects with this steam line, the P&SR being a 38.04 mile electric freight line owned by NWP within the county of Sonoma. It enters an area famed for Gravenstein apples, wine, brandy, and for more eggs and chicks. The



Richard Houghton.

P&SR owns and operates a freight steamboat, a tug and barge which ply between Petaluma and San Francisco.

Our train reaches Santa Rosa, the other exchange point with the P&SR at 9:40 p.m., on the advertised, and does a little switching to cut out a headend car of local merchandise. The train is handled gently as it takes water, for many of the passengers are dozing now with heads against the high backs of the red plush coach seats.

Soon, at Healdsburg, we start climbing the canyon of the Russian River. Another car is dropped at Hopland, and another at Ukiah, just after midnight. At Redwood Valley, 12:39 a.m., begins the toughest climb to the summit at Ridge. Helpers are necessary on all trains on this stretch of track. Four locomotives are required on freight trains of 48 cars, which is about the longest drag that can be handled here. On other portions of the line 99 cars are frequently pulled by the hard-working oil-burning locomotives, largest of which are 2-8-0's weighing less than 200,000 pounds on their drivers.

Once over the summit we drop down on an easier grade to Willits, where we are due at 1:28 a.m., to wait there 15 minutes while engines are changed and a new crew takes over. For operating purposes the NWP is divided into two divisions at Willits. However, only the trainmen and enginemen have separate seniority in the two divisions. The railroad, with this exception, operates as a single unit.

As we step down from our motionless car for a breath of mountain air we smell the fragrance of fresh cut lumber. Willits has four sawmills cutting redwood and fir. In the railroad yards there's considerable bustle, even in the middle of the night — the crash of couplers, the bobbing of lanterns, the hiss of steam.

In the old days the daytime trains would stop here 40 minutes, and passengers would eat in the railroad's big lunchroom at the redwood station; but on No. 4 they are mostly sleeping. Daytime rail traffic at Willits now is all freight, some of it is interchange traffic with the privately owned California Western Railroad & Navigation line running into Willits from Fort Bragg on the coast. This feeds carloads of lumber onto NWP's main line.

On No. 4 again, we start gently down the track, with not a jerk to disturb the sleepers, and glide on through the darkness under the stars, between brush covered hills that lead toward the headwaters of the Eel River. This is the canyon of Outlet Creek, peaceful and innocent at this time of the year. From here on the grade is dropping us at a mere .7 of one per cent at the maximum, and one engine handles the train with ease. You notice that the train

W. O. Whittaker, San Jose, Calif.

stops and starts very smoothly, a characteristic of NWP.

Gradually the hills reach up and crowd in to form the canyon of the Eel River. First glow of the coming dawn reveals the outskirts of the redwood forests. From the rear of the train we see the dim shine of receding rails.

By the time we reach South Fork at 6:15 a. m. we are traveling through a natural cathedral whose pillars dwarf the train. Far above us wisps of fog cling to the treetops (the redwoods drink moisture from the fog) and the whistle of our engine is muffled.

The greenery has brightened with the coming of day, and down below in the still pools of the Eel River shines the reflected sunrise. Only evidences of how this river can rage in winter are the occasional collections of driftwood atop some high rock in midstream, and the bareness of the rock banks high above the waterline.

Although there is no grade to speak of, the rails are twisting us around some curves as sharp as 15 degrees, spanning dry ravines and waterways on numerous trestles and bridges, of which there are a total of 315 on NWP, and plunging in and out of scores of tunnels. NWP had to dig 41 tunnels for its main line.

Construction of this main line was one of the most costly pieces of railroad engineering in the United States, and to understand its background we need to dip back into history again.

Shortly after the turn of the century the Santa Fe had decided it would like to control a line to Eureka and Humboldt Bay. To start this project it took over — under the name of the San Francisco & Northwestern Railroad — a number of small lines totaling 51 miles, mostly logging roads in the northern part of the present NWP territory, and also the Fort Bragg & Southern Railroad extending from Albion on the coast about 40 miles to Navarro River. Santa Fe's plan was to build extensions and connect with its main line somewhere between Richmond and Stockton.

About this time Southern Pacific had acquired the former Donahue Lines, and also the Eureka & Klamath River Railroad on Humboldt Bay. SP also hoped to build a through line, and as part of this plan it bought the North Shore.

It was evident that construction of two through lines would be a waste of transportation facilities, so Santa Fe and Southern Pacific merged their interests to form the Northwestern Pacific, incorporated January 8, 1907. The passenger terminal activities at Tiburon were moved to Sausalito for greater economy and convenience, and Tiburon became the main freight terminus.

Of the two proposed routes for the main line to Eureka, the newly born NWP chose the one originally favored by SP, from Willits down through the canyons of Outlet Creek and the main fork of the Eel River. Construction crews worked from both ends of the route, which was

Train No. 1, opposite, is crossing Island Mountain bridge pulled by a heavy gas-electric combine. The tunnel and bridge join at a sheer cliff overhanging Eel River. Right, Scotia Bluffs where a footing for the right of way was possible only by using trestlework dipping into the river.

Dan Howe, 11 Scenic Dr., San Rafael, Calif.

105 miles long, with 59 miles of curved track. The work was slowed up by a business depression, but on October 23, 1914, President W. S. Palmer swung a silver hammer on the golden spike connecting the track near the longest bridge, 1117 feet, close to Alderpoint.

After this ceremony the trainload of notables, including the mayors of San Francisco and Eureka, started for Eureka to continue the celebration, but prophetically they were delayed four hours by a slide at Sonoma Flats. The line was not opened to through traffic until the next spring, after the damage caused by winter floods and slides was repaired. In the first years of operation it was never certain that a train would get through without delay, so a lunch car was always included.

Even today, maintenance is a major problem on NWP. One slide 600 feet wide at the tracks and extending 6000 feet back up the mountainside wasn't conquered until the railroad built into it $54,000 worth of drain tunnels. Another slide at Ramsey still is in almost continuous motion, but is no longer feared. The railroad keeps careful watch and control.

Southern Pacific in 1929 bought out the Santa Fe — by this act indicating faith in the ability of NWP to pay its way. That faith has been strained at times, especially in the winters when rain falls in torrents — from five feet to seven feet of it in a season on some parts of the railroad — and maintenance crews often work night and day. But from late spring to early fall NWP is a railroadman's paradise. Busy freights are reflected in the peaceful emerald rivers. Redwood forests stand in tall grandeur up the slopes beside the track. The bright clean foliage of madrones, tan oaks, laurels and firs, crowd close along the fern-bordered right of way.

When summer brings its let down in immediate maintenance problems the crews get a chance to prepare for the coming winter by strengthening weak spots along the right of way and otherwise anticipating their rainy weather jobs.

Eureka is not far ahead of us now. We forget our hunger in watching the forest unfold before us and close in behind. Deer may be seen in the open meadows. Here's a side canyon with an old logging road. A moment later through the trees is seen a string of flats on a spur, giant logs piled on the cars. Fragrance of the growing redwoods and fresh cut wood is everywhere. Over all is a sense of peace and timelessness. Some of the trees under which we are wheeling, and which will not be felled by the lumberjacks, have stood here since before the dawn of christianity. They were ancient trees when Columbus discovered America.

The wheels sing on the rails as we pass through McCann, South Fork, Shively. At Scotia we see the great plant of the Pacific Lumber Company, which is fed by an extensive railroad system of its own.

Beyond Scotia our train rumbles under the famous Scotia Bluffs where the track is built mostly on trestlework.

Freight trains that operate daily between San Francisco Bay and Humboldt Bay, which we shall soon see, were hauling essential materials to war bases dotting the northern California coast in wartime. Among these installations is the plant at Eureka where the Chicago Bridge & Iron Company built the largest drydocks afloat. The floating drydocks went to the battle zones to make temporary repairs on damaged warships in the open sea. The plant where they were built was located on NWP property, and everything going into the huge docks had to be delivered by this one railroad, including heavy and bulky steel plates and shapes, great quantities of machinery and fittings.

Logs and lumber from the vast forests are the freight that is most typical of "The Red-

NO HUGE STEAM SHOVELS to help early Pennsylvania Railroad builders! It was pick, shovel and muscle—as you can see from this old photograph.

Working

Since 1846, four generations of Pennsylvania Railroad men and women—working together as a team—have striven ceaselessly to improve transportation for the American people.

Each generation has made its vital contribution, left its mark on the roadbed of progress.

The first generation laid the immense framework, with few exceptions, of the present Pennsylvania System . . . The second double-tracked, triple-tracked, four-tracked—broadened and strengthened it . . . The third generation drove the tunnels under the Hudson River and built the great Pennsylvania Station in New York;

Partners

linked New England with the Pennsylvania Railroad by bridging the East River at Hell Gate; electrified the railroad's Atlantic seaboard operation—and, in addition, helped to move the enormous numbers of men and materials that brought victory in World Wars I and II.

Today the fourth and newest generation, united with the third—a working force of 168,000 employees—is not only meeting the day-to-day transportation needs of the American traveler and shipper—but building new locomotives, new cars, new technical equipment to carry on the work of progress so ably started 100 years ago.

PENNSYLVANIA RAILROAD

1846 *1946*

ONE HUNDRED YEARS OF TRANSPORTATION PROGRESS

Jack Farley.

wood Empire Route," although nearly one in every five cars is loaded with rock, sand or gravel for use in west coast construction.

If all the cars carrying lumber products in one ordinary year on NWP could be coupled end to end they would form a train almost as long as the entire railroad. The timber is loaded at such points as Samoa, Arcata, Korblex, Eureka, Scotia, South Fork, Longvale, Calpella, Alton. Many carloads of huge logs are hauled to the mills, but most of the wood products handled by NWP are finished lumber, railroad ties and piling. The railroad gets all its redwood ties from its own territory, this wood being remarkably resistant against decay. The piling moves on combinations of flat cars — sometimes three cars being necessary to carry the longest piling. Besides redwood there is considerable pine and fir harvested, and about two carloads of cedar a day are hauled from north of Arcata.

Northwestward is "eastward" in railroad language, agreeing with the rule that all traffic moving toward San Francisco is westbound and contrarywise traffic is eastbound, no matter how it moves by the compass. Westbound traffic moves southeastward by compass on NWP.

Two through freights are operated each night, delivering the loadings of the preceding day. Two work trains are in operation daily. There are 12 local freight trains, most of which operate in the daylight hours.

We are nearing the end of our journey. Loleta, on time, at 7:51. From this station NWP hauled 60 carloads of ice cream mix a month for the armed forces.

Beatrice at 7:59. We're rolling along like a high wheeler on the high iron. (It's only 75 pound steel here.)

South Bay at 8:08, and Eureka, our destination, at 8:25.

Near Eureka is a whaling station which produces whale oil and fertilizer to be hauled by the railroad. Eureka also turns out great quantities of fish and lumber. More appropriate to our romantic mood this morning, however, is the thought that Eureka in springtime ships out large numbers of rhododendron plants by rail to nurseries all over the country, samples of the beauty to be found along the main line of NWP.

In the old days when our train pulled up to the big frame station we would find busses from the Hotel Vance and Eureka Inn on hand to greet us — but not this morning. We've let off most of our passengers en route, and there are not enough prospective hotel customers left to make it worth while for the busses to worry about us.

We don't care. In the mood we're in, a bus ride would be a let down. We've just completed one of the most beautiful train rides in America, rich in the lore of railroad pioneers. Too bad we had to ride at night. We are making a mental note to pick the full of the moon next time.

Arthur Lloyd.

Small drawbridges are found at points both north and south of San Rafael. The one pictured, opposite, is at Gallina. Above, No. 1, the prewar daylight train to Eureka, stops at Santa Rosa in the heart of a great garden and orchard country. Below, the operator of a weed burner looks on as a local freight makes a drop at Alderpoint. Near here the line crosses the Eel River on a truss bridge 1117 feet long. This is on the section of line that was built in order to join the Santa Fe owned and Southern Pacific owned trackage. Nearly every mile of track was in rugged country.

Richard Houghton.

Northwestern Pacific.

Northwestern Pacific.

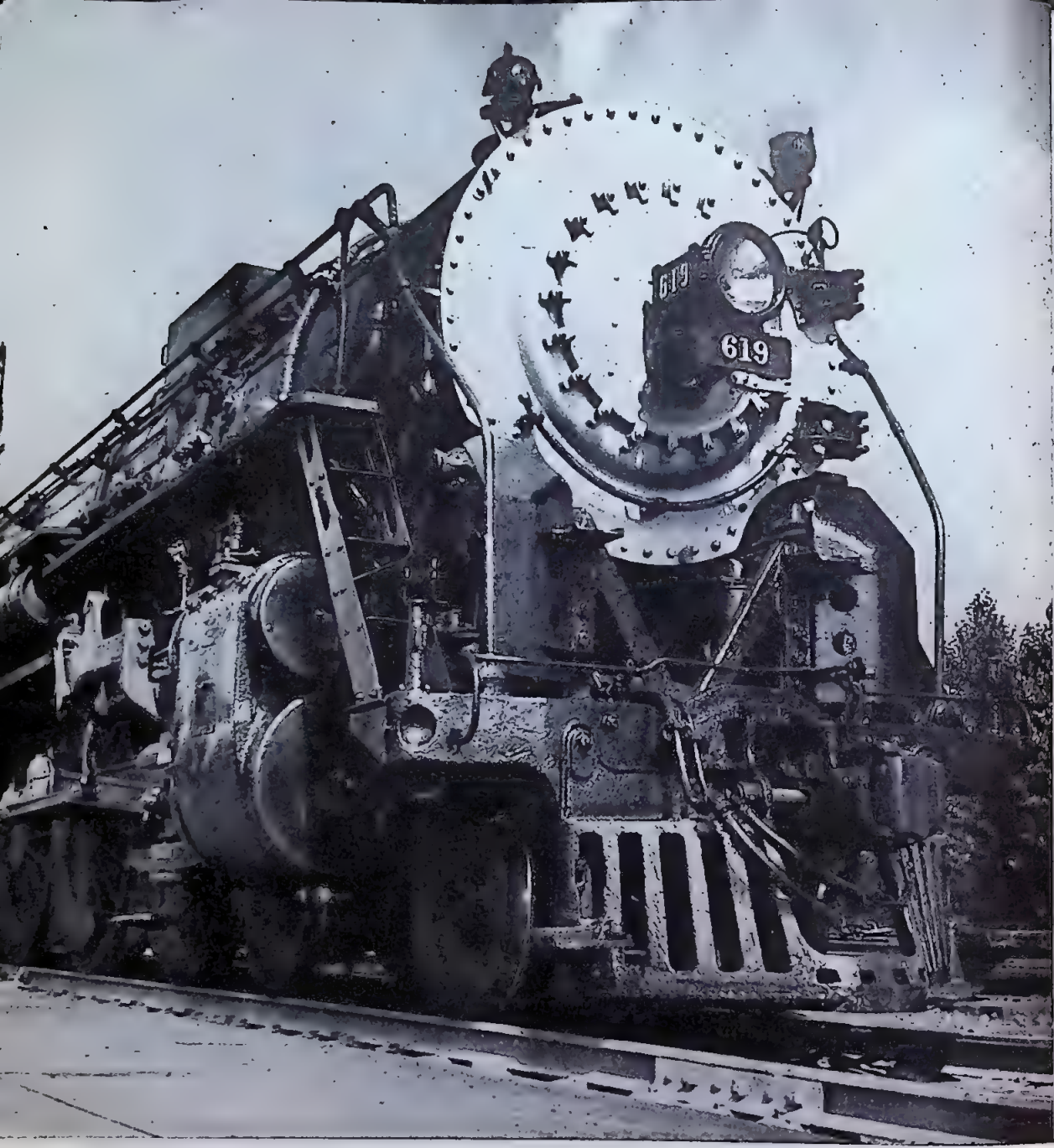
Willits to Eureka

Above, supply train is in the hole while freight X182 passes another extra at Fort Seward, a point about midway on the northern half of the line. This part of the line was constructed to join the two ends of what is now NWP. Eel Rock, left, is just a few miles north of Fort Seward. There are many places where the woods open out like this. Other regions have been cut over by the lumbermen but present-day practices are leaning toward selective cutting processes. Many motorists visit the Redwood Empire each season. The highway passes along the South Fork of the Eel River a few miles east of the railroad. Little do the tourists know of the even more beautiful scenes by the railroad route, but no day train has operated since war traffic required the rails for other purposes and the railroad has little to attract the sight-seer at the present time.

Stanley Borden.

Extra 2759, bearing the name Southern Pacific Lines on the side of its tender, works a train up the two per cent grade from Willits. Many of the engines leased by NWP still bear the SP lettering. Some will be returned with war needs slackening. Below, three logs are all that can be loaded on each car on this lumber train, X170, pulling out of Fernbridge.

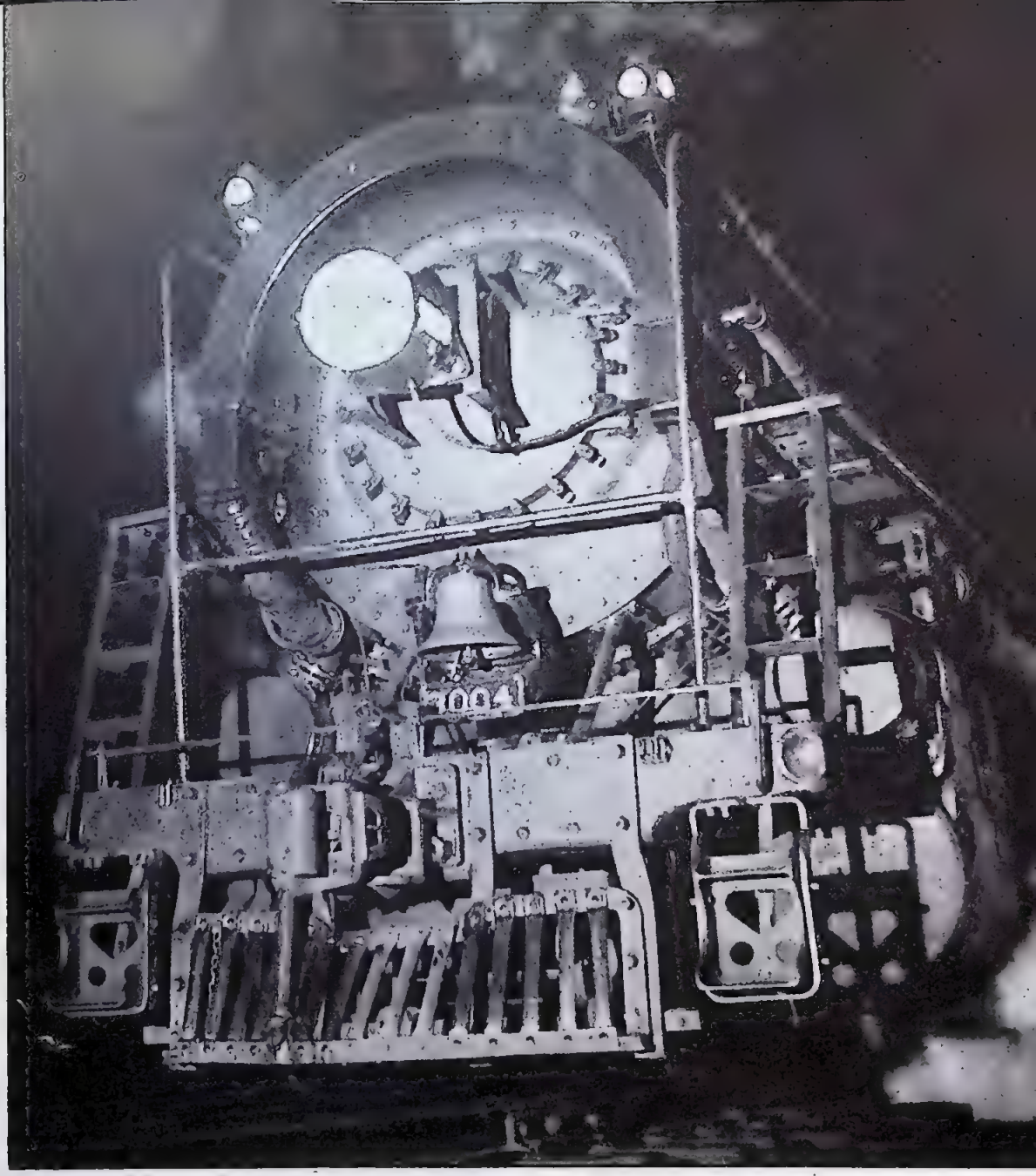
Stanley Borden.



A. S. Arnold, 6 Einhorn Rd., Worcester, Mass.

No. 619

If the New York Central Hudson is the country's most beautiful locomotive, then surely its cousin, the Boston & Albany Hudson, is the country's runner-up as most beautiful locomotive. This is one of the B&A jobs, with characteristic square sandbox, leaving Worcester.



A. S. Arnold

No. 3004

The Boston & Maine 2-10-2 type locomotives, like their Berkshire type brothers in the 4000 series, carry Coffin feedwater heaters mounted like a horseshoe for luck over the smokebox front. This is on a Mechanicville-bound fast merchandise train.

Railway to the Clouds

Best scenic railroad ride in New England is the Mount Washington cogwheel route

BY STEPHEN BOGART

Marshfield House is the starting point for the flight to the clouds. Vice-President and Manager Arthur S. Teague, who will reopen the line June 15, won many decorations in the war.

The angels didn't operate the "Railway to the Clouds" but they surely must have kept close watch over it, for the Mount Washington Railway can boast that no passenger was ever killed or injured while riding the cushions to the summit of New Hampshire's loftiest peak. Oddly enough the safest, slowest railway ever built also operated the fastest and most dangerous newspaper delivery service in the world! More will be told of this later.

Railroading at 6293 feet above sea level may be an old story to Rocky Mountain hoggers but many a tourist has left the base station of the Mount Washington Railway on a day apparently made to order for sightseeing, only to find his train actually chugging and clanking its way through a low-lying cumulus curtain which effectively blocked the 130-mile view he came to enjoy. Conversely, visitors to the summit are frequently amazed to find several of New Hampshire's higher mountains sticking their tops above the clouds, and what looked like a foggy day at the base turns out to be sunny and bright after a mere train ride of something like three miles. Either way the weather doesn't bother Mount Washington hoggers as there are no grade crossings, junctions, passing sidings or signals to worry about. And either way the trip is always worth while for the passengers as many interesting varieties of flora and fauna, otherwise found only within the arctic regions, are visible along the right of way.

When Sylvester Marsh, a Littleton, N. H., inventor, conceived the world's first and steepest mountain-climbing cog railway he found the public skeptical of his brain child and extremely wary about advancing him the necessary funds. It is said that the staid gentlemen of the legislature waggishly voted him a franchise to build a cog railway to the moon, but Marsh quickly silenced his hecklers by conducting a successful public demonstration of cog railroading over a half-mile test track on August 29, 1866. The gradient on this test section was even steeper than the 25 per cent average grade planned for the road itself.

Financially aided by several railroad companies, Marsh completed the cog railway in a little over three years—in July, 1869, to be exact. Three years to lay three miles of track isn't exactly a record but one must remember that, with the exception of the first quarter mile, the track was not laid on the usual cinder or stone ballast but was supported by a continuous timber trestle varying in height from two feet above ground level most of the way to some 20 feet on "Jacob's Ladder," at which point the ruling grade was 36.6 per cent. In addition to this the track gangs had three rails to lay instead of the usual two, for between the running rails was the "cograil" or "rack" to which Marsh's mountain-climbing railway owed its success. This cograil consisted of two parallel lengths of angle iron spaced about 3½ inches apart and connected to each other every 2½ inches with sturdy pieces of round steel bar, thus forming a rack into which the gears beneath the locomotives meshed securely. As the gears were independently connected to the cylinders it was possible to drive the locomotive up the steepest grade even though the drivers themselves were spinning on slippery rail.

Old Peppersass, the original Mount Washington locomotive, had an upright boiler somewhat like the Baltimore & Ohio's *Atlantic* but the similarity ended there, because builders Aiken, Campbell and Whittier hung the boiler from a pivot arrangement which permitted it to remain vertical regardless of variations in the track grade. On top of that the old girl made a noise like no other engine in the world. It was this noise, the constant, monotonous clatter-clatter of the ratchet, which gave the Mount Washington its 100 per cent safety record, for these gears engaged the rack of the center rail, thus making it possible to hold a train motionless at any point regardless of slippery track conditions and independent of the other braking systems. While later engines substituted a horizontal boiler, raised slightly at the firebox end so as to remain approximately level on the steep grade, the rack and pinion has survived.

In actual operation the locomotive pushed one single-truck car at a time to the summit, the trip taking about 75 minutes. Starting at the base station, the train made a stop for passengers at Marsh-Field (said to be the smallest ticket office in the world) then continued to Coldspring Hill, where an operating stop was made. Soon after crossing Jacob's Ladder timber line was passed and a variety of interesting arctic flowers were apparent. After a second stop at Gulf Tank the train chugged by the Lizzie Bourne monument, a rough stone cairn, and finally arrived at the summit. The return trip, during which the locomotive backed slowly down in front of the car, took only five minutes less than the ascent. Car and locomotive were never coupled, the idea being that

the car could be stopped independently should there be any locomotive brake failure.

For many years a small newspaper containing the names of visitors to the summit and other scintillating chatter was published on Mount Washington and delivered daily to the hotels at the base. It was this paper, *Among the Clouds,* which frequently provided employees of the cogroad the opportunity for a more rapid descent of the mountain than usual. This was done by the use of "slideboards" or "shingles," toboggan-like gadgets about a yard long and 12 inches wide. These shingles fitted over the cograil and slid down at roller-coaster speed, controlled only by friction brakes which the rider gripped (no doubt tightly!) in a manner similar to the handholds on a regulation toboggan. In order to deliver *Among the Clouds* to the base station in time to be perused over breakfast coffee the paper was frequently carried down the mountain by slideboard at 60 miles an hour. The all-time record made by Patrick Camden was two minutes and 45 seconds for the three mile run.

The use of the slideboard was finally banned after several employees were seriously injured and another killed while "running extra." Slideboarding also caused the tragic death of two 19-year-old schoolboys who attempted a roller-coaster descent of the mountain on a shingle made of old ties roped together. The impromptu device ran wild and jumped the track on Jacob's Ladder, plunging to the rocks below.

In 1904 *Old Peppersass* disappeared from view and was generally forgotten. Nearly 25 years later she was "discovered" in the B&O station at Baltimore by Guy Robert, an amateur historian of Whitefield, N. H.

On July 20, 1929, a gay homecoming complete with bunting and speeches was arranged, and B&M President George Hannaur formally presented the 63-year-old engine to the State of New Hampshire, represented by Governor Tobey. At the conclusion of the ceremonies *Old Peppersass,* fortunately running light, again clanked and puffed her way to the summit.

The faithful old gal made her run to the top as smoothly as ever but had barely started her return trip down the mountain when something threw her out of mesh with the cograil and she began to pick up speed.

The crew tried unsuccessfully to stop *Peppersass* by using the hand brakes but were forced to jump, leaving the historic locomotive to run wild down the steep grade, carrying with her Daniel Rossiter, a photographer who was killed. Why Rossiter failed to join the birds with the members of the crew is unknown. When he did jump from the tender the runaway was already on the 325 foot long Jacob's Ladder and ready to leave the rails herself.

Peppersass was hauled from Burt's Ravine (named for the founder of *Among the Clouds*) nine days after the accident, completely rebuilt and returned to the B&O.

During the war service was suspended but the railway is again in operation this year. Motorists from all parts of the country are converging on the base station for a restful journey up New England's most unique railroad.

If you have an old stereo viewer try it with the photo on the opposite page showing Peppersass or its twin brother at work before the line was opened in 1869. Above, approaching the summit the trains pass great chasms called gulfs. Below, Jacob's Ladder, a trestle 20 feet high and 325 feet long, is considered the most spectacular part of the long climb.

Yucatan 4-4-0's

Although the lightweight 4-4-0 American Standard locomotive is practically extinct in the United States, it is still in demand on many light traffic railways in other countries. This builder's photo shows No. 81, one of the two narrow gauge 4-4-0's on the United Railways of Yucatan, Mex. The system, a consolidation of four railways and two pier companies, owns and operates 532 miles of line, of which 452 miles are 0.914 meter gauge (three feet) and 63 miles 1.435 meter gauge (4 feet 8½ inches). The new locomotives will haul bananas, figs, hemp and coffee, all for exporting.

The other photograph shows the actual shooting of the builder's photo in the yard of Baldwin's erecting shop. One locomotive of each order is selected for a builder's photo. It is painted with dull paint to avoid reflections, and its wheel hubs and tires are painted white. A coat of varnish applied later makes it look like a conventional paint job. The background is eliminated by opaque painted carefully around the outline of the engine on the photographic negative. This produces a dead white background effect where once shop windows confused the scene.

Principal Dimensions:

Road numbers	80, 81
Tractive effort, lbs.	9000
Cylinder diameter and stroke, in.	13 x 28
Driver diameter, in.	46
Weight of engine, lbs.	37,000
Weight of engine and tender, lbs.	63,000
Boiler working pressure, lbs.	160
Grate area, sq. ft.	9.7
Tender capacity	Gallons of water 2500 Gallons of oil 1200

C. A. Brown.

Air Lines Will Not Ruin the Railroad Passenger Business

A READER LETTER

Please! Mr. Kotz:

I would like to offer a rebuttal to the letter entitled "First-Class Coach" written by Donald H. Kotz, Kenosha, and appearing in April TRAINS on page 55.

I can agree with Mr. Kotz when he says, "Nothing can equal a steamer's whistle in the night," and I momentarily acquired a life-long friend when I read the sentence, "The finest in passenger equipment to my way of thinking is the open-end observation car with polished rails." Those words, Mr. Kotz, are music to a railfan's ears, but heaven forbid that I should repeat what you said after that.

The idea that the air lines will acquire all the first-class passengers is preposterous. Why? I'll be glad to tell you — not as an air-line despiser — not as a die-hard railroader — but, on the contrary, as a pilot and aircraft designer. Believe me, Mr. Kotz, the railroads will not find it necessary to junk all their plans for super de luxe streamliners (first class) and revert solely to coach business.

In the first place there are THOUSANDS, and I use the word without fear of contradiction, who will never travel by air regardless of price, luxury, speed or any other factor, so long as they live. Is it right, or even good business, for the railroads to deny these people the luxury of first-class train travel?

For many years I have enjoyed the hobby of planning itineraries for friends, acquaintances and business associates, and to this day I have never been asked to obtain a coach seat — on the other hand, I have purchased hundreds of parlor car seats. Requests for space on extra-fare name trains is the rule, not the exception.

During the war years three of Southern California's largest aircraft manufacturers purchased so much space on the *Super Chief*, the *Los Angeles Limited*, the *Chief*, the *City of Los Angeles*, the *Golden State Limited*, and the *California Limited*, that each passage of these trains was a small aircraft convention. Sure, you say, the air lines didn't have enough planes to handle the business. Quite true, but, also, the passengers had a free choice.

In all fairness is there any comparison between the lap tray meal served on a so-called de luxe air liner, and the marvelous cuisine afforded passengers aboard any of our first-class trains? Is there any comparison between the 10 square feet afforded in the average air-liner washroom as compared to the 50 square feet or more on the average first-class train (in every car)? What other transportation system besides the air lines hangs a cardboard carton — sickness cup — within easy reach of every passenger? Certainly not our railroads. Have you ever tried to view the scenery — usually clouds — from an aisle seat in an airplane? And, worse yet, through a window the size of a porthole? Compare this with the view afforded from any seat in the observation or parlor cars you would scrap or convert into coaches.

Suppose you were one of the businessmen you mentioned in your article, and you had finished your work in Los Angeles late in the afternoon and were contemplating your departure for San Francisco. You could travel by air or train. If you travel by air you would spend almost an hour by cab or limousine getting to the airport, and if reservations were available, a two hour flight would bring you into the San Francisco airport. Another 45 minute breath-taking cab or limousine ride, and you would be in the heart of the city — a potential customer for a worthy hotel. Why all the rush? You still must sleep, and why not on the train? Just by way of comparison, suppose you had enjoyed a good leisurely dinner in Los Angeles and boarded the Southern Pacific's beautiful streamlined *Lark*. If you enjoy dining car meals as I do, you would dine on board the train. The dining car, lounge car and observation buffet lounge car are at your disposal until you choose to retire. You are lulled to sleep by the gliding motion of this superb streamliner, and awaken in time to enjoy a delightful and leisurely breakfast before alighting refreshed in San Francisco ready to do another full day's work.

Emergencies may exist where one day transcontinental air-line service is a necessity, in fact, even desirable. However, the day is still a long way off when a percentage even approaching the majority of potential first-class passengers will settle for anything short of real first-class passage aboard one of our many new streamliners.

It might be of interest to some of our defeatist railroaders (presidents or railfans) to know that the so-called first-class air liners are being converted into what the aircraft industry delicately refers to as high density transports. Such terminology fools very few people. The facts are that most new commercial air liners are far less comfortable than our first-class railroad coaches, and no air liner operating in scheduled service over the 48 states can possibly compare with the comfort afforded the patrons of Pullman or railroad operated parlor cars.

Another point worthy of mention is the effect of high altitudes on air-line passengers. Many scheduled flights are operated at eight thousand to 14 thousand feet. This is considerably higher than most people find to their liking or enjoyment. At the present time there are only a few air liners equipped with pressurized cabins. Admittedly, the aircraft manufacturers are designing equipment that will operate at 40 thousand or 50 thousand feet and be relatively comfortable. However, it will be a long time before this equipment will become available in any important quantity.

E. F. Hunter Jr.
Santa Monica, Calif.

"The railroad runs right through my store!"

"WHAT I MEAN IS THIS: the railroad connects my store . . . and my business . . . with every other town and city in the whole country.

"That means I can give my customers the same kind of merchandise—the same up-to-the-minute goods—that folks in the big towns enjoy.

"So you see why I figure that the railroad is really in partnership with me, and with every other local merchant."

•

Yes, throughout their exciting history, America's railroads have played a big part in helping to develop community life and business.

The railroads are *local* business. They employ people wherever they run. They buy supplies in seven out of every eight counties of the U. S. They own property in every community they serve—and pay local taxes. In fact, as much as half the tax money received by many counties is paid by the railroads. And that can't be said of any other form of commercial transportation!

American railroads are working to improve still further their essential service to the nation's people, to expand their partnership with the nation's business. The vast amount of new equipment required will be bought with railroad money, without federal, state, or municipal aid. For the railroads, like other local business, are self-supporting—neither asking nor expecting financial aid from other taxpayers. Safe, dependable, inexpensive—the railroads continue to be the backbone of America's transportation service.

AMERICAN RAILROADS

IN PARTNERSHIP WITH ALL AMERICA

Welding side on all-steel, plywood-lined box car

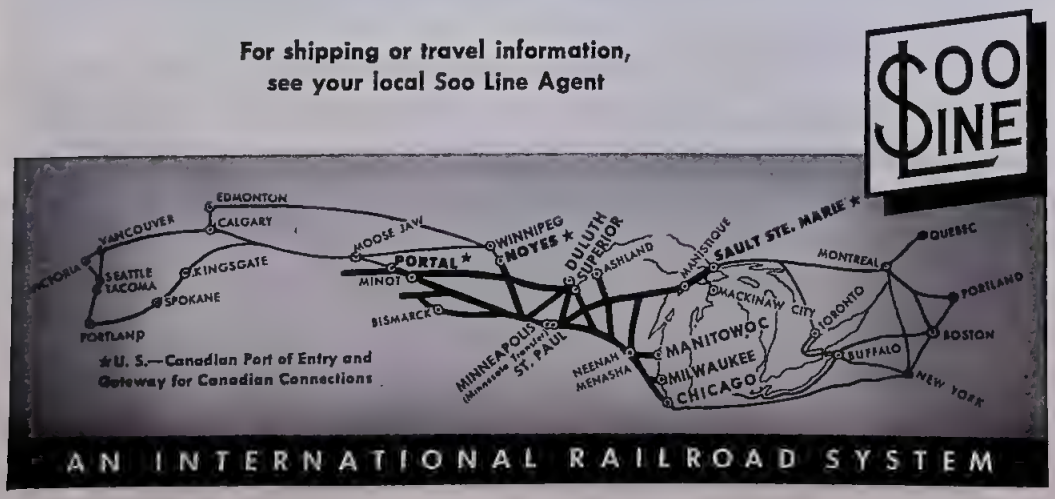
Builders

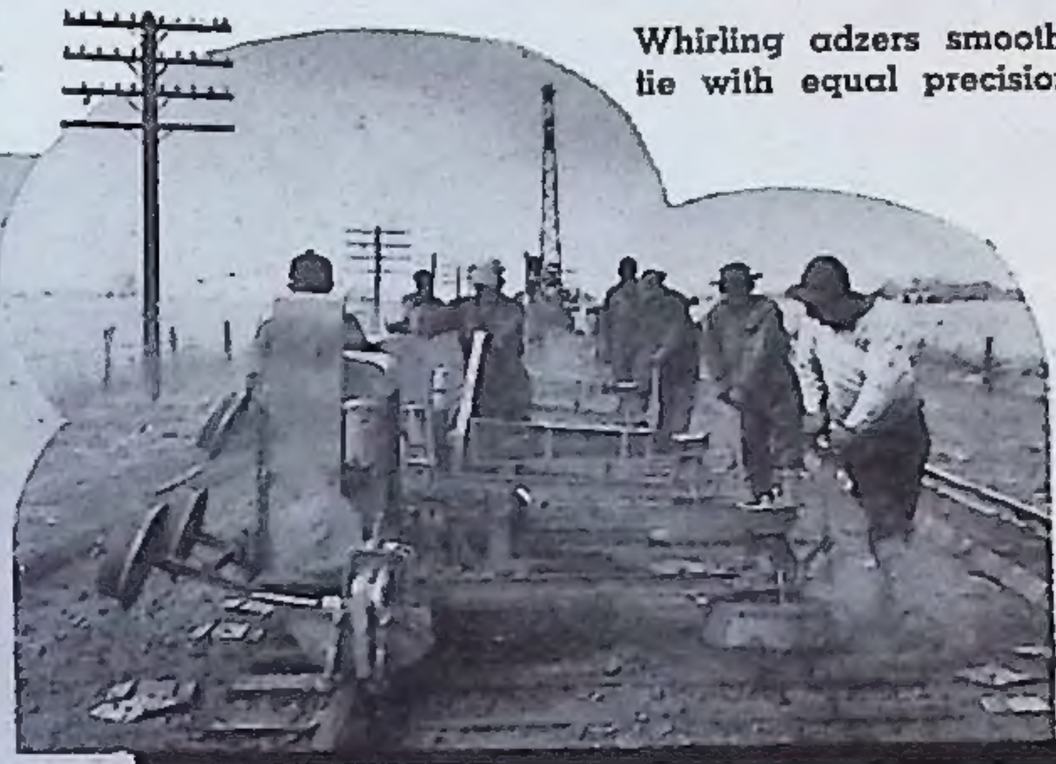
Milwaukee Road engineers are always seeking something better in design and methods. ¶ The application of new techniques produced the HIAWATHAS, first of the Speedliners. For freight service, all-welded, plywood-lined steel box cars were developed that carry heavier pay loads with less dead weight. ¶ Milwaukee Road craftsmen build the best that rolls on rails in the Company's complete manufacturing plant at Milwaukee, Wisconsin. ¶ Milwaukee Road men design 'em, build 'em and roll 'em. It's a combination that can't be beat.

THE *Milwaukee* ROAD

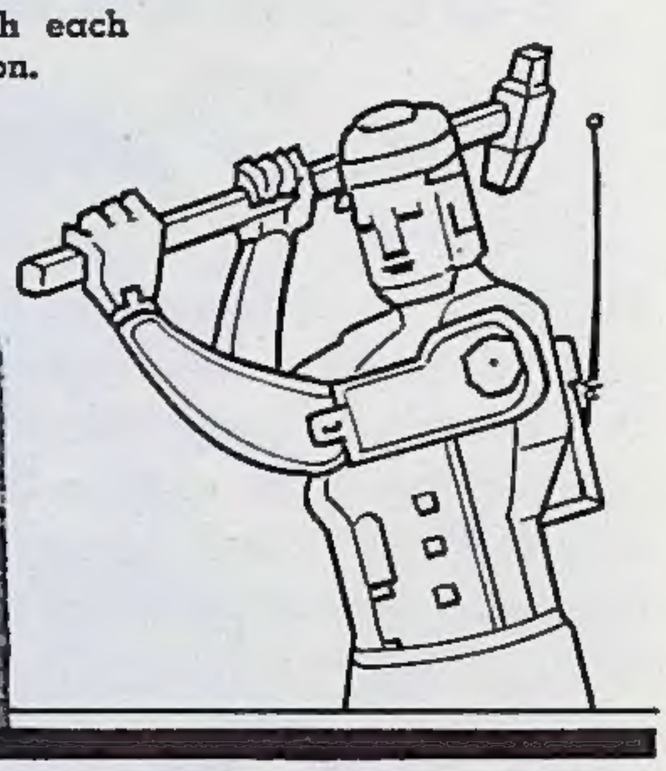
Crossing accidents are on the increase! And most of them could have been avoided. Caused by somebody's carelessness, they result in untold damage, suffering, injury—even death. In the interest of safety let us all resolve: To adjust driving speeds to weather and traffic conditions . . . to have our vehicle always under control . . . to avoid taking chances . . . and to *stop, look, listen at every railroad crossing.*

For shipping or travel information, see your local Soo Line Agent





Whirling adzers smooth each tie with equal precision.

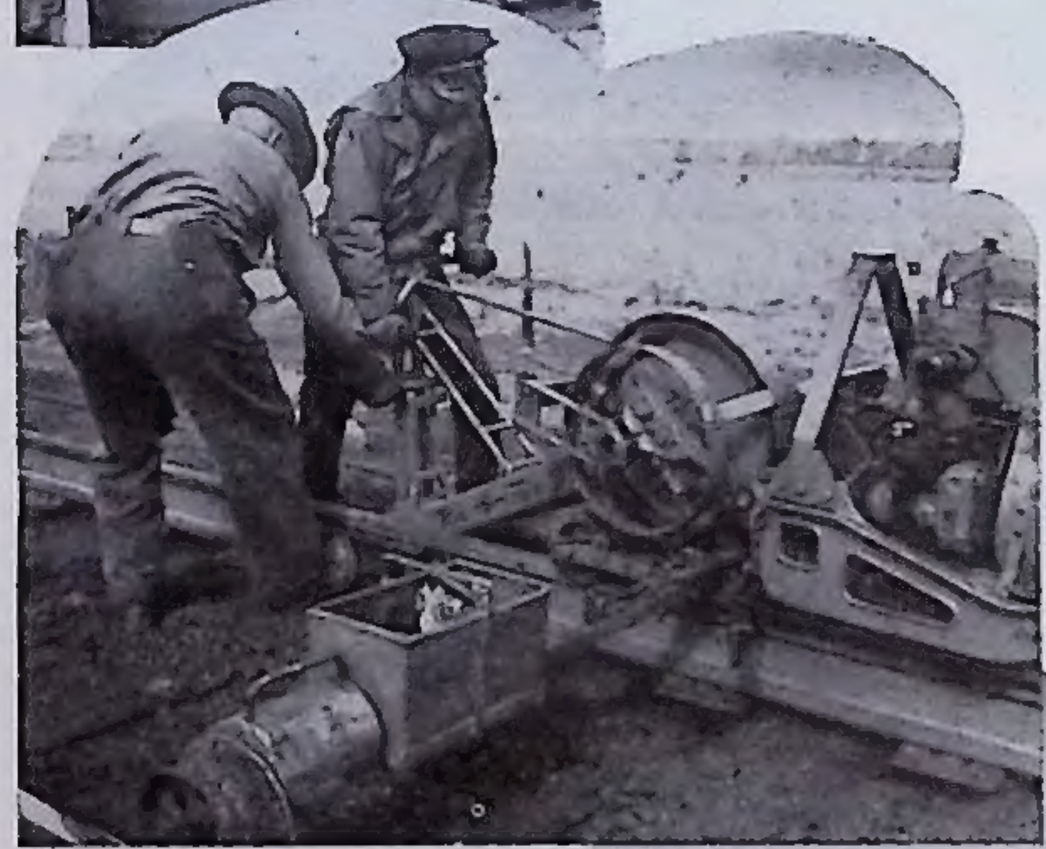


MECHANIZED

Rail-laying crane swings 1700-pound link into place.

Modern Rail-laying Methods Speed Rio Grande Improvement Program

Now being installed are 140 miles of new, high-speed, heavy-duty steel rails designed to carry heavier trains more swiftly and yet more safely . . . Three million dollars will be spent in 1946 on this phase of the post-war program inaugurated to keep Rio Grande facilities modern in every respect. *Route your shipments via the direct, central transcontinental route.*



Special machine tightens nuts and bolts evenly and securely.

Air-driven hammers quickly sink each spike securely into ties.

F. C. HOGUE
General Traffic Manager
DENVER & RIO GRANDE WESTERN RAILROAD
Rio Grande Building
Denver, Colorado

Rio Grande

LIMA
LOCOMOTIVES
for France

On July 31 of last year, Lima Locomotive Works, Inc., turned over to the French Supply Mission the first of one hundred eighty 2-8-2 steam locomotives which Lima is building for the rehabilitation of the French railway system.

Here the Belpareil, of Oslo, is ready to leave Weehawken, N. J., for France, completely loaded with a shipment of these especially designed locomotives.

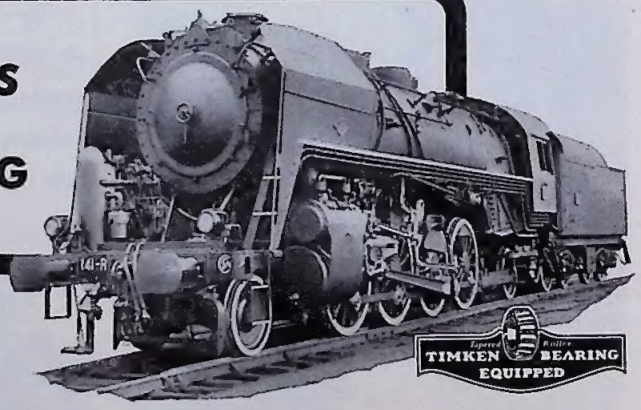
LIMA LOCOMOTIVE WORKS INCORPORATED

Lima Locomotive Works, Incorporated

LIMA, OHIO

1340 LOCOMOTIVES

TIMKEN BEARING EQUIPPED



The photograph shows one of the 1340 locomotives being built in the United States and Canada for service on the French National Railways:

Timken Roller Bearings are being used on these locomotives as follows:

Driving Axles	2,720 Journals	Trailer Trucks	2,680 Journals
Engine Trucks	2,680 Journals	Tender Trucks	5,120 Journals

Five locomotive builders — three in the United States and two in Canada — are engaged in producing these engines. They are: American Locomotive Company, Baldwin Locomotive Works, Lima Locomotive Works, Inc., Montreal Locomotive Works, Limited, and Canadian Locomotive Company, Limited.

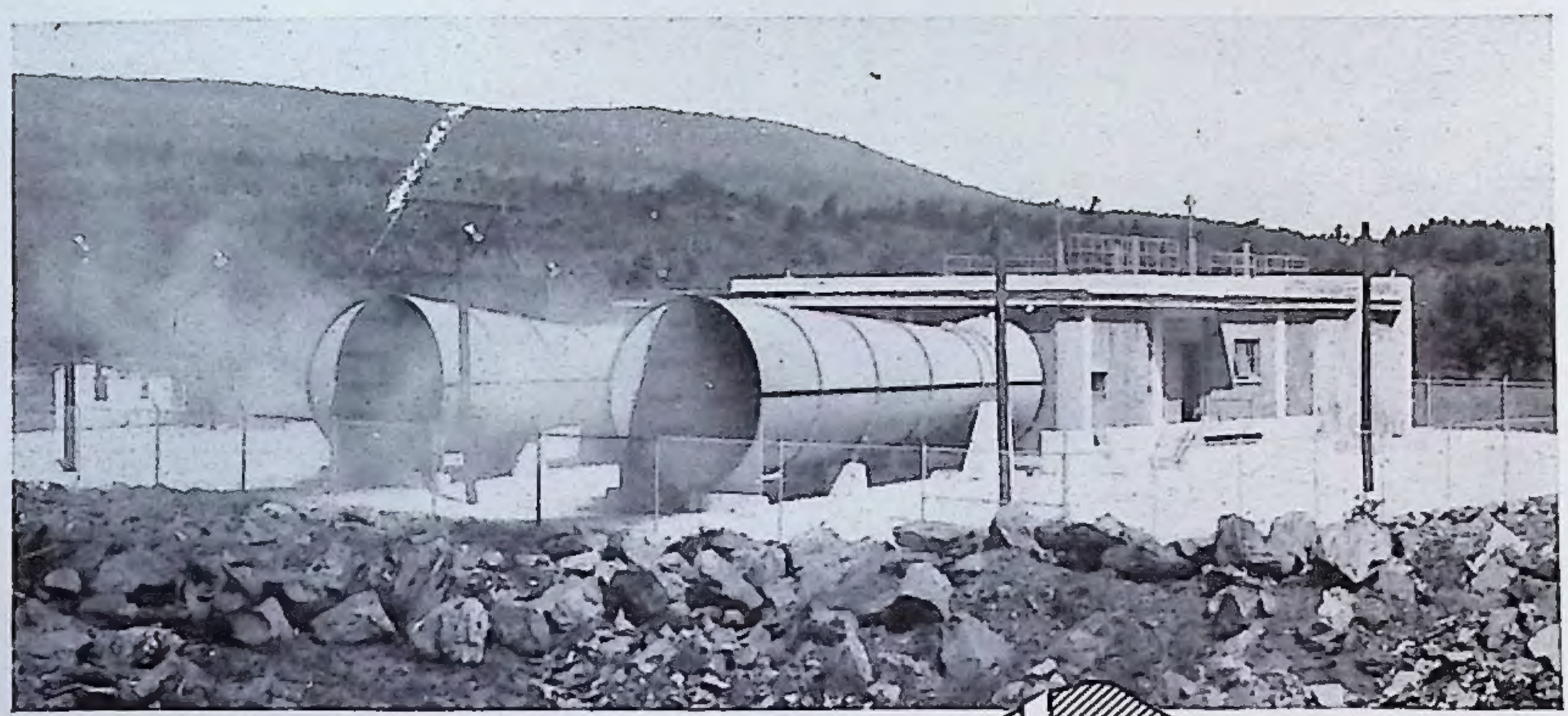
More than 400 locomotives already have been completed.

The selection of Timken Bearings is in line with modern American practice in new locomotives of all types — steam, Diesel and electric. The Timken Roller Bearing Company, Canton 6, Ohio.

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

RAILWAY ROLLER BEARINGS



How to AIR A 5-MILE TUNNEL *in 25 minutes*

The Boston and Maine's world-famous Hoosac Tunnel now has a brand new pair of "lungs"! Two huge fans, each driven by automatically controlled, 100-horsepower motors, have recently been installed high on Florida Mountain atop the ventilating shaft which leads 1,028 feet down to the double-tracked tunnel.

These new fans, operating together at high speed, can exhaust 475,000 cubic feet of air a minute . . . can clear the 5-mile tunnel of fumes in 25 minutes . . . adding materially to the comfort of passengers and employees as Diesel and Electric powered trains speed under the Berkshire Hills between Boston and the B and M's gateway to the West at Troy, N. Y.

BOSTON and MAINE RAILROAD

"MINUTE MAN SERVICE"

Are Railroads necessary?

We get rather tired of people (including some airline executives) saying that this is the Air Age and implying that pretty soon there won't be any need for railroads.

This is also the Atomic Age. Pretty soon there may not be any air, either.

We'd like to see an airplane tote a trainload of oranges from Los Angeles to Chicago, or 5,000 tons of pig iron from Provo, Utah, to Pittsburg, California —or 2,500 tons of newsprint from British Columbia to San Francisco.

For that matter, it would have to be a pretty good-sized plane to accommodate the 500 passengers just one of our streamlined *Daylights* carries each day from San Francisco to Los Angeles—for a little over a cent a mile.

Airplanes have their place and so do trains and trucks, and ships.

The advantage of the train is simply this: *you can pull more than you can carry.* All other forms of transportation are, in effect, carrying their loads in their arms. Only the railroads pull theirs.

We can tie nearly a mile of cars to a single locomotive and roll 5,000 net tons of freight at a crack.

This multiple-unit advantage makes a passenger train literally a hotel on wheels, with a dining room, living room, cocktail lounge and comfortable beds to sleep in at night.

So next time you get into an argument about which is the best—the train or the plane —please don't sell the old Iron Horse short.

Incidentally, if you're planning a trip to California this summer, our service is much faster and better, even, than it was before the war. Drop us a line and we'll be glad to help you plan your trip.

The little map shows where we go.

S·P *The friendly Southern Pacific*

J. H. Desherow, Passenger Traffic Mgr., 535 Fifth Ave., New York 17, New York
O. P. Bartlett, Passenger Traffic Mgr., 310 S. Michigan Ave., Chicago 4, Illinois